

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Brief
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Group 3700

Applicant: SpeedFam-IPEC Corporation

Serial No.: 09/008,148

Filing Date: January 16, 1998

Title: METHOD AND APPARATUS FOR THE CHEMICAL
MECHANICAL PLANARIZATION OF ELECTRICAL DEVICES

APPELLANT'S REPLY BRIEF

This Reply Brief is in response to the Examiner's Answer mailed on October 1, 1999. Pursuant to 37 C.F.R. § 1.193(b), Appellant may file a Reply Brief to the Examiner's Answer. Accordingly, Appellant is filing this Reply Brief, which addresses points of argument set out by the Examiner, in the order in which they were raised in the Examiner's Answer.

1. The Examiner states that the "terminal disclaimer does not comply with 37 C.F.R. 1.321(b) and/or (c) because: the person who has signed the disclaimer has not stated the extent of his/her interest, or the business entity's interest, in the application/patent." When the Examiner first set forth her double patenting rejecting in her Office Action dated July 9, 1998, Applicant responded by filing an appropriate terminal disclaimer in accordance with 37 C.F.R. 1.321(b) on October 9, 1998. In that terminal disclaimer, the owner of the instant application was identified as SpeedFam Corporation and the person signing the terminal disclaimer was identified as Applicant's attorney of record. In the Examiner's second and final Office Action, dated January 5, 1999, the Examiner rejected Applicant's previously filed terminal disclaimer contending that "it does not comply with 37 C.F.R. 1.321(b) and/or (c) because: the person who has signed the disclaimer has not stated the extent of his/her interest, or the business entity's interest, in the application/patent." In response to the Examiner's rejection of Applicant's terminal disclaimer, Applicant clearly pointed out in its Response dated March 4, 1999, that Applicant's attorney of record signed the terminal disclaimer

as Applicant's attorney of record, and that the terminal disclaimer also identified Applicant, SpeedFam Corporation, as the assignee and owner of the patent application. Further, Applicant specifically pointed out the page numbers and paragraphs which contained this information in Applicant's terminal disclaimer. Subsequent to Applicant's explanation, the Examiner issued an Advisory Action which stated that the terminal disclaimer still did not satisfy Rule 321(b)(3). In that Applicant could not determine why Applicant's terminal disclaimer still did not satisfy 37 C.F.R. 1.321(b) from the Examiner's statement contained in the Examiner's Advisory Action, Applicant simultaneously filed a replacement terminal disclaimer along with Appellant's Brief which stated that the Applicant was the sole and 100% owner of the subject patent application. Applicant took this additional step to resolve the matter despite Applicant's position that Applicant's previously filed terminal disclaimer complies with 37 C.F.R. 1.321(b)(3). Finally, in the Examiner's Answer, the Examiner again stated that the terminal disclaimer does not comply with 37 C.F.R. 1.321(b) and/or (c) because the person who signed the disclaimer has not stated the extent his/her interest, or the business entity's interest, in the application/patent. No further explanation was given regarding non-compliance of the terminal disclaimer. The Examiner failed to address Applicant's explanation in its March 4, 1999 Amendment and Response, which set out reasons why Applicant's terminal disclaimer meets the requirements of 37 C.F.R. 1.321(b)(3). The Examiner also ignored and failed to address Applicant's reasons which were restated in the Appellant's Brief as well as the replacement terminal disclaimer submitted with the Brief. It is the Appellant's position that Applicant's original terminal disclaimer, filed October 9, 1998, meets all the requirements of 37 C.F.R. 1.321(b).

2. Appellant first responds to the Examiner's contention that the combination of Ronay in view of Samuelson clearly establishes a *prima facie* case of obviousness. More specifically, on pages 5 and 6 of the Examiner's Answer, the Examiner states that "if the prior art structure is capable of performing the intended use, then it meets the claim." The Examiner further states the following: "Ronay discloses a polyurethane pad that polishes a dielectric wafer of a semiconductor that will be

scratch free. Samuelson teaches a non-cellular polyurethane pad which is excellent for polishing operations in various delicate operations (col. 10 line 14) and is 'free to deform during use and is formed of a flexible elastomeric polyurethane.' Therefore, the pad of Samuelson is 'soft and pliable' and capable of 'conforming' to the workpiece and resisting damage. The pad of Samuelson would not 'damage' the workpiece because it achieves fine polishing or 'finishing' of a workpiece."

Appellant contends that the Examiner has taken short and incomplete quotes from the Samuelson reference out of context in order to support her position. Although the Samuelson reference states that "the wheel is excellent for polishing or blending edges and for various delicate operations", all of the examples set out in the Samuelson reference refer to the finishing of workpieces which comprise different steel shapes, namely a workpiece having cylindrical surfaces which have different diameters (see col. 11, lines 4-7) and a metal faucet (see col. 11, lines 42-48). When taking the entire disclosure contained in Samuelson in context, it is clear that the "various delicate operations" refer to the polishing or blending of sharply rounded edges, contoured surfaces, and the like which exist on steel or metal workpieces.

With respect to the Examiner's argument that Samuelson would not damage the workpiece because it achieves fine polishing or finishing of a workpiece, Appellant directs the Examiner to the definition of the term "finishing" as set out in the Samuelson specification. "The term 'finishing' as applied to a finishing wheel and as used herein and understood in the art refers to a process herein [wherein] the surface of the workpiece is refined without significant metal removal to provide a desired surface roughness (for example, below 20 microinches, rms) without significant dimensional change (for example, a stock removal of less than 0.0004 inch) or wherein deburring is effected without significant dimensional change. Such term excludes grinding wheels but covers deburring wheels which do not effect grinding." (see Samuelson col. 11, lines 64-68 and col. 12, lines 1-5) The dimensions referred to in the Samuelson reference make it clear that one of ordinary skill in the art would not contemplate using the pad in Samuelson "to conform to integrated circuit device layers on a workpiece to resist damage" due to the fact that the size and dimensions of integrated circuit device layers are on a much smaller scale than those dimensions associated with the term "finishing"

in the Samuelson reference. In fact, dimensions associated with integrated circuit device layers are in the nanometer range, i.e., 10^{-9} meters, while the finishing described in the Samuelson reference refers to a dimension in the range of 5-10 micrometers, i.e., $5-10 \times 10^{-3}$ meters. Obviously, one of ordinary skill in the art would neither contemplate nor take the position that a pad used to remove material in the 10^{-6} range would also be successful in removing or finishing material or devices in the 10^{-9} range because the difference in these ranges constitutes a magnitude of 1,000x. Therefore, the prior art structure in Samuelson is not capable of performing the intended use, namely conforming to integrated circuit device layers on a workpiece to resist damage, and therefore does not meet the claim.

The Examiner also argues that the prior art of record does suggest the combination of the Ronay and Samuelson references. Although the Examiner lists a number of advantages of the Samuelson pad which would also be considered as advantages in the Ronay application if used in the Ronay application, this list cannot be considered to be a suggestion to combine the references, especially where the pad in Samuelson could not be used to carry out the application disclosed in Ronay. Appellant contends that the pad in Samuelson could not be used to carry out the application disclosed in Ronay for the reasons clearly set out above.

3. Finally, the Examiner argues that Samuelson and Ronay constitute analogous art and there is no basis for concluding that steel or metal workpieces are the only workpieces that could be finished by the pad disclosed in Samuelson. The Examiner also argues that Samuelson is indeed analogous art in that it is found in the subclass of the abrading art under "utilizing non-rigid tool".


Appellant contends that the polishing or finishing of steel or metal workpieces such as metal objects and faucets described in the 1977 Samuelson reference is not analogous to the polishing of semiconductor wafers described in the 1998 Ronay reference. The fact that both references refer to "finishing" does not automatically mean that the references are analogous. In fact, the finishing of workpieces described in Samuelson occurred more than 20 years before the finishing of workpieces described in Ronay. The types of workpieces being finished in Ronay exist at a thousand times

smaller dimension than the workpieces described in Samuelson. Therefore, it is clear that the finishing of these different types of workpieces does not automatically constitute analogous art. Further, the fact that the workpieces finished in Ronay are 1,000 times smaller than the workpieces being finished in Samuelson make it clear that the pad in Samuelson used to carry out the finishing would not be amenable to finishing the workpieces discussed in Ronay.

For the above reasons, as well as all of those arguments set out on previous papers contained in the record, Appellant contends that Appellant's pending patent claims are directed to patentable subject matter.

Dated: December 1, 1999

Respectfully submitted,



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CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)

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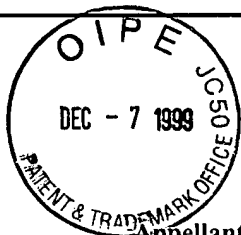
Examiner

Eileen P. Morgan

Group Art Unit

3723

Invention: **METHOD AND APPARATUR FOR THE CHEMICAL MECHANICAL PLANARIZATION OF ELECTRICAL DEVICES**




I hereby certify that this

Appellant's Reply Brief*(Identify type of correspondence)*

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